

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): In a wireless communications network, a method for coordinating access to a shared transmission medium, said method comprising:

upon admission of a new node, recording at a master node a contact path from said master node to said new node;

at said master node, generating a schedule of wireless transmission for nodes of said wireless communication network, said schedule precluding collisions between simultaneous transmission by any pair of nodes controlled by said master node including pairs of nodes that do not hear each other's transmissions, said schedule including time slots allocated to nodes that can be directly contacted by said master node, said time slots being expandable, wherein generating said schedule includes determining when to expand a first time slot associated with said nodes that can be directly contacted by said master node to accommodate said new node and expanding said first time slot when it is determined that said first time slot is to be expanded; and

distributing said schedule from said master node to nodes controlled by said master node.

Claim 2 (canceled)

Claim 3 (currently amended): The method of claim 1 [[2]] wherein at least one of said time slots includes a subslot allocated for transmission by a node that cannot be directly contacted by said master node.

Claim 4 (original): The method of claim 1 wherein recording said contact path comprises registering a link usable to communicate to said new node to a routing client.

Claim 5 (currently amended): In a wireless communication network, a method for coordinating access to a shared transmission medium, said method comprising:

at a selected wireless node of said network, receiving registration information from a newly contactable node;

forwarding said registration information from said selected wireless node to a master node;

at said selected wireless node, receiving from said master node a registration response;

at said newly contactable node, transmitting an acknowledgement to said registration response to said master node through said selected wireless node;

creating a time allocation for said transmission by said newly contactable node by expanding a transmission slot reserved for said selected wireless node;

at said master node, transmitting said time allocation for transmission by said newly contactable node;

at said selected wireless node, receiving from said master node said $[[, a]]$ time allocation for transmission by said newly contactable node; and

transmitting said time allocation for transmission by said newly contactable node to said newly contactable node.

Claim 6 (original): The method of claim 5 further comprising:

at said selected wireless node, receiving a data transmission during a timeslot defined by said time allocation; and

forwarding said data transmission to said master node.

Claim 7 (currently amended): In a wireless communication network, a method for coordinating access to a shared transmission medium, said method comprising:

generating a transmission schedule at a master node, wherein said transmission schedule is divided into time slots, at least a first time slot of said time slots being allocated for transmission from a first node that can be directly contacted by said master node to said master node, and wherein generating said transmission schedule includes expanding the first time slot to

accommodate transmission from a second node that cannot be directly contacted by said master node but can be directly contacted by said first node; and

distributing said transmission schedule from said master node to other nodes of said wireless communication network, ~~;~~ and

~~wherein said transmission schedule is divided into time slots, at least one time slot being allocated for transmission from a first node that can be directly contacted by said master node to said master node and for transmission from a second node that cannot be directly contacted by said master node but can be directly contacted by said first node.~~

Claim 8 (currently amended): Apparatus for operating a master node of a wireless communication network, said apparatus comprising:

a wireless interface that communicates information via a wireless transmission medium and that receives a transmission originating with a new node of said wireless communication network; and

a processor that:

records a contact path from said master node to said new node;

generates a schedule of transmission via a shared transmission medium by nodes of said wireless communication network, said schedule precluding simultaneous transmission by any pair of nodes controlled by said master node including pairs of nodes that do not hear each other's transmissions, said schedule including time slots allocated to nodes that can be directly contacted by said master node, said time slots being expandable, said time slots including a first time slot that is expandable to accommodate said new node when necessary; and

distributes said schedule to other nodes of said wireless communication network.

Claim 9 (canceled)

Claim 10 (currently amended): The apparatus of claim 8 [[9]] wherein at least one of said slots includes a subslot allocated for transmission by a node that cannot be directly contacted by said master node.

Claim 11 (original): The apparatus of claim 8 wherein said processor registers a link usable to communicate to said new node to a routing client.

Claim 12 (currently amended): In a wireless communication network, apparatus for operating a selected node of a wireless communication network, said apparatus comprising:

a wireless interface that communicates information via a wireless transmission medium and that receives a transmission from a new node of said wireless communication network, said transmission comprising registration information for said new node; and

a processor that:

forwards said registration information to a master node of said wireless communication network;

receives from said master node a registration response;

transmits said registration response to said newly contactable node;

receives an acknowledgement to said registration response from said newly contactable node;

transmits said acknowledgement to said master node;

receives from said master node a time allocation for transmission by said new node, said time allocation for transmission by said new node being created by said master node by expanding a transmission slot reserved for said selected wireless node; and

transmits to said new node said time allocation for transmission by said new node.

Claim 13 (original): The apparatus of claim 12 wherein said processor:
receives a data transmission during a time slot defined by said time allocation; and
forwards said data transmission to said master node.

Claim 14 (currently amended): In a wireless communication network, apparatus for operating a master node of said communication network, said apparatus comprising:

a wireless interface that transmits and receives via a wireless transmission medium; and

a processor that:

generates a transmission schedule for nodes of said communication network, wherein said transmission schedule is divided into time slots, at least a first time slot of the time slots being allocated for transmission from a first node that can be directly contacted by said master node to said master node, said first time slot being expanded to accommodate transmission from a second node that cannot be directly contacted by said master node but can be directly contacted by said first node; and

distributes said transmission schedule from said master node to other nodes of said wireless communication network; and

~~wherein said transmission schedule is divided into time slots, at least one time slot being allocated for transmission from a first node that can be directly contacted by said master node to said master node and for transmission from a second node that cannot be directly contacted by said master node but can be directly contacted by said first node.~~

Claim 15 (currently amended): In a wireless communication network, a computer program product for coordinating access to a shared transmission medium, said product comprising:

code that, upon admission of a new node to said wireless communication network, records at a master node a contact path from said master node to said slave node;

code that, at said master node, generates a schedule of wireless transmission for nodes of said wireless communication network, said schedule precluding simultaneous transmission by any pair of nodes controlled by said master node including pairs of nodes that do not hear each other's transmissions, said schedule including time slots allocated to nodes that can be directly contacted by said master node, said time slots being expandable, wherein said code that generates said schedule includes code that determines when to expand a first time slot

associated with said nodes that can be directly contacted by said master node to accommodate said new node and code that expands said first time slot when it is determined that said first time slot is to be expanded;

code that distributes said schedule from said master node to nodes controlled by said master node; and

a computer –readable storage medium that stores the codes.

Claim 16 (canceled)

Claim 17 (currently amended): The product of claim 15 ~~[[16]]~~ wherein at least one of said slots includes a subslot allocated for transmission by a node that cannot be directly contacted by said master node.

Claim 18 (original): The product of claim 15 wherein said code that records said contact path comprises code that registers a link usable to communicate to said new node to a routing client.

Claim 19 (original): In a wireless communication network, a computer program product for operating a selected node of said wireless communication network, said product comprising:

code that receives registration information from a newly contactable node;

code that forwards said registration information to a master node;

code that receives from said master node a registration response;

code that transmits said registration response to said newly contactable node;

code that receives an acknowledgement to said registration response from said newly contactable node;

code that transmits said acknowledgement to said master node;

code that, at said selected wireless node, receives from said master node, a time allocation for transmission by said newly contactable node, said time allocation for transmission

by said newly contactable node being created by said master node by expanding a transmission slot reserved for said selected wireless node;

code that transmits said time allocation for transmission by said newly contactable node to said newly contactable node; and

a computer-readable medium for storing the codes.

Claim 20 (original): The product of claim 19 further comprising:

code that, at said selected wireless node, receives a data transmission during a timeslot defined by said time allocation; and

code that forwards said data transmission to said master node.

Claim 21 (currently amended): In a wireless communication network, a computer program product for coordinating access to a shared transmission medium, said product comprising:

code that generates a transmission schedule at a master node, wherein said transmission schedule is divided into time slots, at least a first time slot of said time slots being allocated for transmission from a first node that can be directly contacted by said master node to said master node, and wherein said code that generates said transmission schedule includes code that expands the first time slot to accommodate transmission from a second node that cannot be directly contacted by said master node but can be directly contacted by said first node;

code that distributes said transmission schedule from said master node to other nodes of said wireless communication network; and

a computer-readable storage medium for storing the codes, ;and

~~wherein said transmission schedule is divided into time slots, at least one time slot being allocated for transmission from a first node that can be directly contacted by said master node to said master node and for transmission from a second node that cannot be directly contacted by said master node but can be directly contacted by said first node.~~

Claim 22 (currently amended): In a wireless communications network, apparatus for coordinating access to a shared transmission medium, said apparatus comprising:

means for recording at a master node a contact path from said master node to a new node;

means for, at said master node, generating a schedule of wireless transmission for nodes of said wireless communication network, said schedule precluding simultaneous transmission by any pair of nodes controlled by said master node including pairs of nodes that do not hear each other's transmissions, said schedule including time slots allocated to nodes that can be directly contacted by said master node, said time slots being expandable, wherein generating said schedule includes determining when to expand a first time slot associated with said nodes that can be directly contacted by said master node to accommodate said new node and expanding said first time slot when it is determined that said first time slot is to be expanded; and

means for distributing said schedule from said master node to nodes controlled by said master node.

Claim 23 (currently amended): In a wireless communication network, apparatus for coordinating access to a shared transmission medium, said apparatus comprising:

means for, at a selected wireless node of said network, receiving registration information from a newly contactable node;

means for forwarding said registration information from said selected wireless node to a master node;

means for, at said selected wireless node, receiving from said master node a registration response;

means for, at said newly contactable node, transmitting an acknowledgement to said registration response to said master node through said selected wireless node;

means for creating a time allocation for said transmission by said newly contactable node by expanding a transmission slot reserved for said selected wireless node;

means for, at said master node, transmitting said time allocation for transmission by said newly contactable node;

means for, at said selected wireless node, receiving from said master node, a time allocation for transmission by said newly contactable node; and

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means for transmitting said time allocation for transmission by said newly contactable node to said newly contactable node.

Claim 24 (new): The method of claim 5 wherein said registration information includes a MAC layer address of said newly contactable node and said registration response includes an IP address.